

ISTANBUL, 8 MAY – 2 JUNE 2000

PLENARY MEETING**United States of America****PROPOSALS FOR THE WORK OF THE CONFERENCE****PROPOSAL FOR AGENDA ITEM 1.13.1**

On the basis of the results of the studies in accordance with Resolutions 130 (WRC-97), 131 (WRC-97) and 538 (WRC-97): to review and, if appropriate, revise the power limits appearing in Articles S21 and S22 in relation to the sharing conditions among non-GSO FSS, GSO FSS, GSO broadcasting-satellite service (BSS), space sciences and terrestrial services, to ensure the feasibility of these power limits and that these limits do not impose undue constraints on the development of these systems and services

Proposal to update the constraints related to the operational applications and technology in the band 13.75-14 GHz (MOD S5.502, ADD S5.502A and MOD S5.503)

Background information

At WARC-92 and as modified at WRC-95, Nos. S5.502, S5.503 and S5.503A were added to the Table of Frequency Allocations to facilitate compatibility between the existing applications of the radio services in the 13.75-14 GHz band. It was agreed that any modifications to any of these footnotes in order to accommodate new technology, new requirements and applications of the FSS should consider the overall interference environment in the 13.75-14 GHz band and be undertaken with great care in order to avoid upsetting the delicate balance previously achieved between the services. The present operational constraints, that satisfy the protection criteria of current operational applications and technology in the band 13.75-14 GHz, are to be found in Nos. S5.502 and S5.503.

Studies that led to the development of these footnotes did not account for non-geostationary-satellite orbit fixed-satellite service systems (non-GSO FSS). With the introduction of non-GSO FSS into this band at WRC-97, Resolution 130 (WRC-97) was, among other things, drafted to focus attention on the need to re-examine the sufficiency of these footnotes in maintaining the delicate balance between the services sharing the 13.75-14 GHz band.

Analysis of sharing between geostationary FSS and the radiolocation and radionavigation services is contained in Recommendation ITU-R S.1068. Some studies have shown that sharing with radiolocation systems is significantly more difficult for non-GSO FSS systems than for GSO FSS systems. Other studies have shown that more restrictive e.i.r.p. density limits are needed on non-GSO FSS systems than on GSO FSS systems for protection of space research systems. The protection criteria of the space research links used are those included in Recommendation ITU-R SA.1155. The CPM Report to WRC-2000 provides guidance on possible methods for maintaining

the present balance in the sharing conditions between radiolocation, radionavigation, space sciences and FSS, and accommodates non-GSO FSS systems within the 13.75-14 GHz band. The CPM Report and also studies presented at the WP 4A meeting, 21-29 February 2000, do not provide any substantial evidence to relax the minimum 4.5 metre antenna diameter requirement. This requirement serves to limit the number of FSS earth stations thus maintaining a sharing balance. It would be premature to relax this requirement without further study. The following proposed modifications/additions to the governing footnotes are based on the work of ITU-R.

Proposals

MOD USA/98/1

S5.502 In the band 13.75-14 GHz, the e.i.r.p. of any emission from an earth station in the fixed-satellite service operating with a space station in geostationary-satellite orbit shall be at least 68 dBW, and should not exceed 85 dBW, with a minimum antenna diameter of 4.5 m. In addition the e.i.r.p., averaged over one second, radiated by a station in the radiolocation or radionavigation services towards the geostationary-satellite orbit shall not exceed 59 dBW.

Reasons: Footnotes MOD S5.502, ADD S5.502A and MOD S5.503 retain the delicate balance between the space research, fixed-satellite, radiolocation, and radionavigation services agreed to at WARC-92 and confirmed at WRC-95. Since the earlier studies did not account for non-GSO systems, their allocations requirements are redefined and addressed by new footnote S5.502A. Footnote S5.502 is clarified to apply to geostationary-satellite orbit fixed-satellite service systems.

ADD USA/98/2

S5.502A In the band 13.75-14 GHz, the e.i.r.p. of any emission from an earth station in the fixed-satellite service operating with a space station in non-geostationary-satellite orbit should not exceed 85 dBW and shall have a minimum antenna diameter of 4.5 metres. Receiving space stations in non-geostationary-satellite orbit shall not claim protection from radiolocation and radionavigation transmitting stations operating in accordance with the Radio Regulations.

Reasons: Footnotes MOD S5.502, ADD S5.502A and MOD S5.503 retain the delicate balance between the space research, fixed-satellite, radiolocation, and radionavigation services agreed to at WARC-92 and confirmed at WRC-95. Since the earlier studies did not account for non-GSO systems, their allocations requirements are redefined. Studies have shown that non-GSO receiving space stations will be susceptible to interference from radiolocation and radionavigation stations operating in accordance with the Radio Regulations.

MOD USA/98/3

S5.503 In the band 13.75-14 GHz, geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 shall operate on an equal basis with stations in the fixed-satellite service; after that date, new geostationary space stations in the space research service will operate on a secondary basis. ~~The e.i.r.p. density of emissions from any earth station in the fixed-satellite service shall not exceed 71 dBW in any 6 MHz band in the frequency range 13.772-13.778 GHz.~~ Until those geostationary space stations in the space research service for which information for advance publication has been received by the Bureau prior to 31 January 1992 cease to operate in this band;

a) the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in geostationary-satellite orbit shall not exceed 71 dBW in the 6 MHz band in the frequency range 13.772-13.778 GHz;

b) the e.i.r.p. density of emissions from any earth station in the fixed-satellite service operating with a space station in non-geostationary-satellite orbit shall not exceed 51 dBW in the 6 MHz band in the frequency range 13.772-13.778 GHz.

Automatic power control may be used to increase the e.i.r.p. density ~~above 71 dBW~~ in ~~any~~the 6 MHz band in this frequency range to compensate for rain attenuation, to the extent that the power-flux density at the fixed-satellite service space station does not exceed the value resulting from use by an earth station of an e.i.r.p. of 71 dBW or 51 dBW, as appropriate, in ~~any~~the 6 MHz band in clear sky conditions.

Reasons: Footnotes MOD S5.502, ADD S5.502A and MOD S5.503 retain the delicate balance between the space research, fixed-satellite, radiolocation, and radionavigation services agreed to at WARC-92 and confirmed at WRC-95. Since the earlier studies did not account for non-GSO systems, their allocations requirements are redefined. Studies have shown that an e.i.r.p. density limit of 51 dB(W/6 MHz) for an earth station operating with a non-GSO fixed-satellite service system will facilitate co-equal sharing with the space research service.